

**METHOD OF FORMING A LOW K DIELECTRIC IN A  
SEMICONDUCTOR MANUFACTURING PROCESS**

Abstract of the Disclosure

5           A low K dielectric composite layer is formed of a low k barrier layer and  
a low K dielectric layer on the barrier layer. The barrier layer, which is  
deposited with the result of having a hydrophobic top surface, is treated with an  
oxygen plasma to convert the surface from hydrophobic to hydrophilic. A  
subsequent water-based clean is very effective in removing yield-reducing  
10 defects on the barrier layer due to the conversion of the surface of the barrier  
layer. After the water-based clean, the low K dielectric layer is formed on the  
surface of the barrier layer to achieve the composite layer that has a low K.

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